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Effects of Tai-Chi exercise on blood lipids, inflammatory factors and baPWV of middle-aged and elderly people

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Objective To investigate the interventional effects of 12 months Tai-Chi exercise on blood lipids, inflammatory factors and the interventional mechanism of exercise in arteriosclerosis of middle-aged and elderly people

Methods 30 in middle-aged and elderly people with average age of 63.50 ± 2.91 joined 12 months taijiquan exercise that conducted 60 minutes each time, six times per week. Left brachial-ankle pulse wave velocity (L-baPWV), right brachial-ankle pulse wave velocity (R-baPWV), left ankle brachial index (L-ABI), right ankle brachial index (R-ABI), serum triglyceride (TG), total cholesterol (TC), high density lipoprotein cholesterol (HDL-C), low density lipoprotein cholesterol (LDL-C), interleukin 6 (IL-6) and hypersensitive c-reactive protein (hs-CRP) were detected at 3 time points including before exercise programme, by the end of exercise for 6th and 12th month.

Results ① Compared with pre-exercise, the R-baPWV and R-ABI of the elderly people were decreased at the end of the 6th month, and the L-baPWV, R-baPWV, R-ABI and L-ABI were decreased significantly at the end of the 12th month. ② Compared with pre-exercise, TC and LDL-c were declined markedly ($P < 0.01$) at the end of the 6th and the 12th month, and there was no difference of the level of TG and LDL-c between pre-exercise and post-exercise. ③ Compared with before exercise, the subjects had significantly decreased IL-6 at the end of 6th months of exercise ($P < 0.01$), and the decrease of hs-CRP was not obvious. At the end of 12th months, IL-6 and hs-CRP decreased significantly ($P < 0.01$). ④ According to the correlation analysis, baPWV were positively correlated with TC, IL-6 and hs-CRP.

Conclusions 12 months of exercise intervention can effectively reduce the elderly baPWV and ABI level, improve the blood pressure, blood lipid and body inflammation levels, thus to prevent the happening of the atherosclerosis development plays an important role.